

In the Drawings:

Please approve the proposed changes as shown in red on the attached copies of Figures 7 and 8 of the formal drawings. The proposed changes are limited to the addition of reference numerals 70 and 70' appearing in paragraph 0025 of the specification as originally filed. The change in the profile 70' of Figure 8 is readily seen in the informal drawings originally filed but was incorrectly reproduced in the formal drawings.

REMARKS

Claims 1 - 20 remain active in this application. Claims 16 - 20 have been withdrawn from consideration as being non-elected, without traverse, in response to a requirement for restriction. The specification has been reviewed and editorial revisions made where seen to be appropriate. Claim 13 has been amended to revise dependency. Approval of proposed revisions to the drawings to add required reference numerals and to conform Figure 8 more closely to the informal drawings originally filed has been requested. No new matter has been introduced into the application.

The allowability of claims 6 - 9, 12 and 14 is noted with appreciation.

The Examiner has objected to claim 13 for containing a recitation without antecedent basis. This objection is respectfully traversed as moot in view of the amendment above in which dependency has been revised.

Claims 1 - 5 and 11 have been rejected under 35 U.S.C. §102 as being anticipated by Krivokapic et al. and claims 10 and 15 have been rejected under 35 U.S.C. §103 as being unpatentable over Krivokapic et al. in view of Bae. These grounds of rejection are respectfully traversed.

Initially, it is noted that the Examiner indicates that a product-by-process analysis has been applied to claim 2 and thus the Examiner states that no weight has been accorded to the recitation "self-aligned" therein. It is respectfully submitted that the Examiner's position in this regard is not well-taken and that an improper and unjustified product-by-process analysis has apparently been tacitly applied to claim 1, as well.

In regard to claim 2, it is respectfully submitted that the term "self-aligned" has long been a recognized

term of art and is often used (for example, in the context of claim 2) as an adjective indicating a relational location such as by alignment of edges of different structures where one structure is used to locate another. By the same token or conversely, even if considered to reflect a process, the alignment so produced is well-recognized to be distinct from structures aligned by other processes since self-alignment, whether to the final gate structure or a sacrificial gate structure (see paragraph 0022) is inherently free from registration or overlay errors to which other processes are necessarily subject. Therefore, regardless of whether or not "self-aligned" is considered to reflect a process, it is also recognized to clearly and unambiguously define a structural feature which is necessarily distinct (and so recognized in the art) from other structures not formed through self-alignment and thus there is no need to demonstrate such a structural distinction and no basis for shifting the burden of demonstrating such a distinction by applying a product-by-process analysis.

In regard to claim 1, while Krivokapic et al. may appear to show a discontinuity in a layer and gate structure which are in alignment, it is respectfully submitted that claim 1 clearly recites that the discontinuity is *aligned with* the gate structure while Krivokapic et al., at best, only appears to teach a gate structure aligned with a discontinuity; precisely the opposite of that claimed, as a careful reading of column 2, lines 51 - 59 will clearly reveal. In fact, that passage of Krivokapic et al. explicitly indicates that "nickel enhanced re-crystallization forms a layer 42 of NiSi₂ in the middle of the amorphous silicon layer 40" which is placed between nickel sidewalls at isolation structures 24. Rather, the nickel enhanced recrystallization process is believed to involve diffusion through the silicon during recrystallization

of amorphous silicon to polycrystalline silicon and eventually yielding a deposit of NiSi_2 , which is only generally centralized due to differences in the speed of polycrystalline silicon formation in accordance with grain orientation. (This process is also believed to develop a body of polycrystalline silicon surrounding the NiSi_2 region which must be removed by differential etching.) Therefore, the NiSi_2 gate structure of Krivokapic et al. is not formed *in alignment* with anything, much less in alignment with the discontinuity in layer 30 (which, in any event is opposite to the claim recitation) but simply is formed generally (and fortuitously) centrally of the amorphous silicon layer 40, and the following sentence attributing the aligning of the gate with the opening to the nickel enhanced re-crystallization must be construed in that light: it is the effect of nickel enhanced re-crystallization to form a layer generally centrally of an amorphous silicon deposit; which effect can be used to *locate* that layer in general registration with the opening (as illustrated by the irregular boundaries of layer 42 and lack of registration with edges of opening 28 in Figure 5a of Krivokapic et al.) *while there is no actual process of alignment of the gate and the opening performed or interaction or relationship between them involved in the formation of layer 42.*

Since no weight appears to have been attributed by the Examiner to this clear distinction between the invention as recited in claim 1 or 11 and Krivokapic et al. in the rejection for anticipation, the asserted ground of rejection can, at best, only be colorably proper if the Examiner had applied a product-by-process analysis to claims 1 and 11, as well, to justify according no weight to the recitation of "having a discontinuity aligned with said gate structure". As discussed above in regard to claim 2, there is no rational basis for applying a product-by-process

analysis to claims 1 or 11 based on this recitation since the recitation defines a direct causal and structural relationship between the location of the discontinuity and the gate structure which is not only completely absent from and contrary to Krivokapic et al. but well-recognized in the art to provide a distinct structure from Krivokapic et al. Thus the reference structure cannot reasonably be deemed to be so similar to the claimed invention to justify or for any purpose to be served by shifting the burden to Applicant to demonstrate differences which would necessarily be recognized by those of ordinary skill in the art.

Conversely, while it is respectfully submitted that application of a product-by-process analysis of claims 1 and 11 is improper and without rational basis, it is respectfully submitted that the foregoing discussion is, in fact, a full and complete demonstration of clear structural distinction between the claimed device, even if considered to be claimed through recitation of a process, and the device of Krivokapic et al. In any case, regardless of the analysis applied, it is clear that Krivokapic et al. does not, in fact teach (or suggest) a discontinuity aligned with a gate structure and rejection for anticipation is clearly in error for that reason.

Additionally, in regard to claims 3 and 4, the Examiner observes that "film (30) in Krivokapic can inherently be a stressed film" (emphasis added). It is respectfully submitted that this statement, on its face, demonstrates the impropriety of a rejection for anticipation. For anticipation to be shown through inherency, the "inherent" structure or qualities must necessarily and unavoidably result from subject matter which is, in fact, disclosed in the reference. The Examiner's use of the word "can" clearly indicates an admission that use of a stressed film does not

necessarily result from subject matter disclosed in Krivokapic et al. and that the Examiner's reference to a stressed film was necessarily derived through hindsight in light of the present disclosure. Thus, inclusion of claims 3 and 4 in a rejection based on Krivokapic et al., alone, is clearly improper.

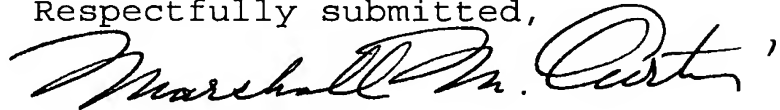
Accordingly, it is respectfully submitted that the Examiner has not made a *prima facie* demonstration of anticipation of any claim in the application. Therefore, the rejection of claims 1 - 5 and 1 is clearly improper and untenable and, upon reconsideration, withdrawal of the same is respectfully requested.

In regard to the rejection of claims 10 and 15 based on Krivokapic et al and Bae, while it is conceded that Bae teaches formation of a void in order to achieve a silicon-on-air structure of reduced capacitance for which it is cited by the Examiner, the Examiner does not assert that Bae mitigates any of the deficiencies of Krivokapic et al. or errors in the rejection based on Krivokapic et al., alone, as discussed above. Therefore, the Examiner has clearly failed to make a *prima facie* demonstration of obviousness of any claim in the application. Therefore, upon reconsideration, withdrawal of the rejection based on Krivokapic et al. and Bae is also respectfully requested.

Since all rejections, objections and requirements contained in the outstanding official action have been fully answered and shown to be in error and/or inapplicable to the present claims, it is respectfully submitted that reconsideration is now in order under the provisions of 37 C.F.R. §1.111(b) and such reconsideration is respectfully requested. Upon reconsideration, it is also respectfully submitted that this application is in condition for allowance and such action is therefore respectfully requested.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 09-0458 of International Business Machines Corporation (E. Fishkill).

Respectfully submitted,



Marshall M. Curtis
Reg. No. 33,138

Whitham, Curtis & Christofferson, P. C.
11491 Sunset Hills Road, Suite 340
Reston, Virginia 20190

(703) 787-9400
Customer Number: 30743

Attachments:

Drawing sheets of Figures 7 and 8 containing
proposed changes in red